Amendments to the Claims

Claims 1-78 (cancelled).

79. (New): An ionization source comprising:

a sample inlet;

an electrically conductive conduit coupled to the sample inlet, the conduit having a first end and a second end, wherein the first end is configured to receive a sample from the sample inlet and the second end is configured to discharge the sample from the sample conduit;

an electrically conductive reference device positioned proximate the second end of the conduit, the reference device and the conduit having an ionization area therebetween, wherein the reference device and the conduit are configured to ionize at least a portion of the sample within the ionization area; and

an ion analyzer configured to receive at least some of the portion of the sample.

80. (New): The source of claim 79 wherein the reference device further comprises a discharge portion coupled to the reference device and located between the second end of the conduit and the ion analyzer.

81. (New): The source of claim 79 wherein the reference device further comprises a plurality of openings, the openings being configured to allow for the removal of sweep gas from the ionization area.

82. (New): The source of claim 79 wherein the reference device is located within the conduit.

83. (New): The source of claim 79 wherein a distance between the conduit and the reference device is greater than the Paschen distance.

84. (New): The source of claim 79 wherein the reference device comprises a metal comprising one or more of stainless steel, platinum, and gold.

85. (New): The source of claim 79 further comprising an electrical circuit configured to establish and maintain an electrical potential between the conduit and the reference device.

86. (New): The source of claim 85 wherein the electrical circuit is configured to maintain at least about a 10 volt electrical potential between the conduit and the reference device.

87. (New): The source of claim 85 wherein the electrical circuit is configured to maintain less than about a 250 volt electrical potential between the conduit and the reference device.

88. (New): The source of claim 79 wherein the conduit is electrically grounded.

89. (New): The source of claim 79 wherein the reference device and the conduit have different electric potentials applied thereto.

90. (New): A sample ionization method comprising:

providing an electrically conductive sample conduit having a discharge end;

providing a reference device proximate the discharge end of the conduit;

maintaining an electrical potential between the conduit and the reference device;

transporting a sample through the discharge end; and

causing electrical arcing between the conduit and the reference device to ionize at least a portion of the sample to produce analyte ions.

91. (New): The method of claim 90 wherein the transporting comprises providing a carrier fluid for transporting the sample.

92. (New): The method of claim 91 wherein the carrier fluid is a gas.

93. (New): The method of claim 90 wherein the electrical potential between the conduit and reference device is maintained slightly above a breakdown potential and the electrical arcing between the conduit and the reference device is caused by the presence of the sample altering the breakdown potential.

94. (New): The method of claim 90 wherein the electrical potential between the conduit and the reference device is maintained such as to produce a continuous arcing therebetween.

95. (New): The method of claim 90 wherein the electrical potential between the conduit and reference device is initially maintained at a level below a breakdown potential therebetween, the method further comprising periodically increasing the potential between the conduit and the reference device to cause periodic corona discharge there between.

96. (New): The method of claim 90 further comprising analyzing the analyte ions using an analyzer.

97. (New): The method of claim 90 wherein the method is performed within an ion mobility spectrometer.

98. (New): The method of claim 90 wherein the method is performed within an atmospheric pressure ionization mass spectrometer.